

TODAY'S MEETING

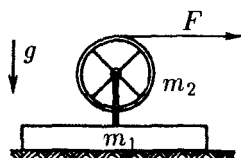
Today we solved the homework on Kepler's laws and then discussed rotation of rigid bodies.

The following problems were solved:

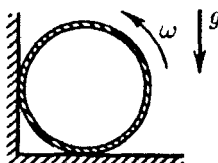
1. a) Find the angular momentum and kinetic energy of a ring of mass m and radius R if it's rotating with angular velocity ω .
b) The same questions for a solid disk with the same mass and radius.

HOMEWORK PROBLEMS

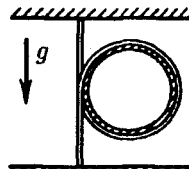
1. On a horizontal frictionless table there is a block of mass m_1 . Installed upon it there is a thin-walled cylinder of mass m_2 and radius R which could rotate around its' axis without friction. There is a thin weightless thread wrapped around the cylinder, as shown on a picture. Find cylinder's angular acceleration and block's linear acceleration if the thread is pulled with force F .
2. A thin-walled cylinder of radius R rotating with initial angular velocity ω is placed in a corner, as shown on a picture. Friction coefficient between the sides of the corner and the cylinder is μ . Find how many times will the cylinder rotate around its' axis before stopping.
- *3. A uniform heavy rope with ends fixed along the same vertical line is grasped around a weightless ring. What is the acceleration of the ring if it's just let go from the rest?



To HW problem 1



To HW problem 2



To HW problem 3

IMPORTANT

The next club meeting is on March 1, 2020. $F=ma$ exam will be discussed.